USDA United States Department of Agriculture | Forest Service | Willamette National Forest Detroit Ranger District | 44125 N. Santiam Hwy SE Detroit, OR 97342

File Code: 1950 **Date:** April 26, 2021
Route To: Project File

Subject: Hwy 46 Supplemental Information Report

To: Shawn Rivera, District Ranger, Detroit Ranger District
CC: District NEPA Planner

The Detroit Ranger District of the Willamette National Forest has conducted an interdisciplinary review of the Hwy 46 Environmental Impact Statement (EIS) and Record of Decisions (RODs) to evaluate the changed conditions caused by the Lionshead Fire resulting in a Supplemental Information Report (SIR). This SIR provides a brief review of the changed conditions following the fire. The project record (located at the Detroit Ranger District) contains detailed notes, maps, and other project information used in this review.

Background: The Lionshead Fire was discovered on August 16, 2020 in the Warm Springs Reservation to the east of the Detroit Ranger District. The fire origin was approximately 13 miles east of the Hwy 46 project area, but the fire spread quickly and experienced explosive growth over 24 hours during a historic wind event on September 7, 2020. The fire progressed into the French Creek area where it met up with the eastern boundary of the Beachie Creek Fire. Approximately 27,397 acres of the 31,295 acre Hwy 46 project area were burned either at a low, moderate, or high intensity. Ultimately the Lionshead Fire was contained at 204,469 acres on November 13, 2020.

Most of the harvest units of Hwy 46 were in the Lionshead Fire perimeter. Containment strategies were focused on the fire perimeter due to the extremely rapid initial expansion of the fire in close proximity to private property and structures, and the fire burned freely through the Hwy 46 project area. Approximately 1,609 acres out of 2,181 acres proposed for treatment were burned.

These units were divided into six timbers sales of which five burned, either in part or wholly. The five sales that burned were all sold. All purchasers have indicated their desires to fulfill their contractual obligations. The Detroit interdisciplinary team (IDT) discussed the changed condition in the project area following the fire and changes to project implementation necessary for resulting environmental impacts to stay below the level of significance, as stated in the Hwy 46 RODs signed in July 2018 and April 2019.

Rule: Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations state: "…agencies shall prepare supplements to either draft or final environmental impact statements if … there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts" (40 CFR 1502.9(c)(ii)).

Forest Service NEPA Handbook (FSH 1909.15) direction requiring review and documentation of new information received after a decision is made states: "Consideration should be given to whether or not the new information or changed circumstances are within the scope and range of effects considered in the original analysis. If, after this interdisciplinary review and consideration of new information within the context of the overall program or project, the responsible official determines that a correction, supplement, or revisions to an environmental document is not necessary, implementation should continue" (FHS 1901.15, 18.1).

Post-fire concerns raised or addressed by the interdisciplinary team:

- The original purpose and need for treating the Riparian Reserves analyzed under the Hwy 46 project is no longer applicable to the fire affected units. The fire has resulted in a complex mosaic of tree mortality in Riparian Reserves in these units, and commercial thinning would no longer be an appropriate method to attain Aquatic Conservation Strategy Objectives. The fire affected Riparian Reserves in these units will be allowed to recover naturally to preserve existing and future large wood and minimize additional impacts to water quality.
- To ensure the effects to Riparian Reserves remains within the scope of the Hwy 46 EIS, extended Riparian Reserve buffers will be incorporated to prevent sedimentation to streams in certain units.
- Soils require a thick layer of soil organic matter to ensure future productivity. Soil organic matter has been removed in many moderate and all high burn areas. Adjust road location and ground-based logging operations based on slope and soil burn severity to limit soil impact. Supplemental Project Design Features will be followed to ensure soil productivity.
- The original prescription for treatment of stands within Late Successional Reserves (LSR) would no longer achieve the objectives of some units. To achieve these objectives, the updated prescription treats heavily burned LSR stands via salvage followed by the replanting of trees to accelerate the rate of development of late-successional conditions. An average of 35 trees per acre averaged at a 10 acre scale will be left to follow the guidelines laid out by the Mid-Willamette Late-Successional Reserve Assessment for coarse woody debris in salvage units, exempting the work from Regional Ecosystem Office review. Green tree harvest will be completed under the original prescription, and green trees remaining in the salvage units will be retained at a level to enhance the rate of development of LSR objectives. See Supplemental Information Review of Salvage in LSR Relative to the Hwy 46 EIS update for more information.

Analysis: After growth of the wildfire had stopped, a Burned Area Emergency Response team was tasked with monitoring the resource impacts of the wildfire. The data provided in their surveys, called RAVG data, is the most up to date data available for this analysis unless otherwise stated. The district specialists have been to select units since the wildfire abated, though not every unit has been seen on the ground by Forest Service employees at the signing of this document. Needed surveys will be completed before implementation can occur.

Wildlife

Northern Spotted Owl

Twenty eight northern spotted owl activity centers overlap proposed activities of the Hwy 46 project (FEIS, p.166). ESA consultation for the Hwy 46 project found that the proposed actions are likely to adversely affect northern spotted owls and their critical habitat, but territories would not be impaired and there was no incidental take given for the project (Project BO-01EOFW00-2017-F-0555 entire). In addition, no activities would occur in nest patches (FEIS, p.164) and seasonal restrictions would be applied around nest patches where needed to prevent any disruption to spotted owls (FEIS, p.169).

Neither the impairment of spotted owl territories or incidental take of northern spotted owls is considered in the FEIS for Hwy 46 or in the consultation for the project and would represent significant new information. The proposed harvest treatments and any changes to the proposed harvest units post-2020 fire were evaluated with respect to whether the action would impair a spotted owl territory which could lead to potential take.

The 2020 Lionshead Fire removed substantial suitable habitat in the Hwy 46 project area. Some spotted owl territories were burned to the degree that they are no longer considered viable. (Based on discussion with the Level 1 Team, this was assumed to occur when the fire reduced the percent of suitable habitat in

both the Core Area and the General Home Range below 10%.) Territories that are no longer viable will not be further impaired by harvest activities in those territories. In addition, the nest patch of MSNO 1099 was burned and the activity center was subsequently moved to an unburned resident single location in that territory. The percent suitable habitat analysis was done for the new Activity Center location relative to the effects of the 2020 fires. Harvest units that downgraded or removed remaining suitable habitat where assessed with respect to impairing remaining spotted owl territories. Spotted owl territories should have at least 50% suitable habitat in the Core Area and at least 40% suitable habitat in the general home range. Three territories were found that would now be impaired by further reduction in suitable habitat should the Hwy 46 project timber harvest proceed as planned: MSNOs 0573, 1099, and 3854. The 2017 suitable habitat composition of those territories compared to the post-2020 condition is shown in Table 1 below.

Table 1. 2017 suitable habitat composition of those territories compared to the post-2020 condition

MSNO	Time Period	% Suitable Core Area	% Suitable Home Range
0573	2017 Hwy 46 Consultation	55%	47%
0573	2021 (post-2020 fires)	14%	23%
1099	2017 Hwy 46 Consultation	39%*	50%
1099	2021 (post-2020 fires)	52%**	34%
3854	2017 Hwy 46 Consultation	61%	58%
3854	2021 (post-2020 fires)	34%	35%

*Although MSNO 1099 was below the 50% suitable habitat in the Core Area in 2017, no removal or downgrade of suitable habitat was proposed in the Core Area and the general home range was above the 40% threshold so the territory was maintained by the Hwy 46 proposed actions.

**The Activity Center was moved for this MSNO because the 2020 fire burned up the nest patch. The new location had a Core Area above the 50% threshold but the general home range was below the 40% threshold.

Because the above three territories were compromised by the 2020 fire, the following harvest units that downgrade or remove suitable habitat would further impair the territories and likely lead to incidental take if occupied: Units: 18b, 24, 24a, 25, 25a, 25b, 26, 31, 83, and 150. These effects were not considered in the current NEPA or consultation. Consequently, the harvest units were dropped or redesigned to maintain at least 60% canopy cover which would maintain the foraging (suitable) habitat.

Also, Units 27, 28 and 28a were designed to maintain suitable habitat in the original proposed action. These three units will be assessed in the field to verify that the harvest prescriptions will maintain at least 60% canopy cover given any tree mortality from the 2020 fires. Otherwise the prescriptions will be modified to assure that 60% canopy cover will be maintained to prevent unit timber harvest from impairing the territory of MSNO 1099.

A separate analysis was done on the effect of converting burned units to salvage harvest on impairing spotted owl territories. Burned areas that were dispersal or better spotted owl habitat that are within 500 feet of 2 acre or larger blocks of unburned dispersal or better habitat are considered to provide short-term foraging habitat post-fire (referred to here as “fire-foraging” habitat.) When assessing the effect of salvaging burned areas, we combined both the unburned or lesser-burned suitable habitat and the fire-foraging habitat in estimating the suitable composition of the home range and required maintaining at least 50% of this habitat in the Core Area and at least 40% in the general home range. The analysis used RAVG mortality of 50 to 100% to estimate burned areas in the fire-foraging identification. Converting

units to salvage had the potential to impair territories MSNOs 3307, 3308, and 3336 by the removal of fire-foraging habitat. The composition of these home ranges is given in the following table.

Table 2. Composition of NSO home ranges

MSNO	Time Period	% Suitable Core Area with fire foraging habitat	% Suitable Home Range with fire foraging habitat
3307	2021 (post-2020 fires)	48%	40.5%
3308	2021 (post-2020 fires)	32%	36%
3336	2021 (post-2020 fires)	43%	34%

Salvage harvest may impair the above territories if done in the following units: 70, 71, 74 (west tip of unit), 400, 530, and 540 (north two-thirds of unit). This analysis was based on the RAVG mapping for mortality and could change based on field evaluation. No salvage harvest is proposed in the units or portion of units identified above.

With the changes to unit prescriptions identified above, the project would have no significant effect on northern spotted owls and is consistent with the effects to northern spotted owls disclosed in the Hwy 46 FEIS.

More details on the above analysis of harvesting green tree and fire foraging habitat relative to the impairment of territories is provided in the project record.

Other Species

After reviewing the Hwy 46 EIS and current regulations and guidance for all other Threatened or Sensitive species evaluated within the Hwy 46 EIS, no change in the determinations is warranted. Also, no change in determination for Survey and Manage wildlife species is warranted.

Seasonal restrictions for the critical breeding period remain in place to protect known raptor nests and streams with historical harlequin duck detections. If any unidentified raptor or other protected species nest is located, protection measures will be revised as stated in contract provisions B6.24 and C6.29.

Modified Riparian Reserves will continue to protect aquatic habitat for wildlife species.

Due to a loss of suitable habitat from the fires, six historic northern spotted owl home ranges that overlap the project area (MSNO 0722, 0732, 3309, 3345, 3349, 3876) are no longer considered viable territories. Therefore, seasonal restrictions are no longer required. A list of Supplemental Project Design Features detailing this is included at the end of this document.

Hydrology

This is a current assessment of the effects of the Hwy 46 timber sales relative to hydrology following the 2020 Lionshead Fire. Hydrology effects of the contracted timber harvest were analyzed in the Hwy 46 EIS and RODs and subsequent ESA consultation with NMFS for the northern portion of the project area. The 2020 wildfires had subsequent direct and indirect effects on the hydrology of the Hwy 46 project area that occurred prior to much of the planned Hwy 46 timber harvest. Direct effects of the fire to the hydrology are vegetation mortality in Riparian Reserves and moderately to severely burned soils across the landscape. Indirect effects of the fire include decreased shade, altered riparian area composition, and increased runoff and sediment delivery to streams.

The direct and indirect effects of continuing with the planned and sold/awarded timber sales were analyzed in the post-fire conditions. Analysis of the cumulative effects of the wildfires itself on the watershed or the cumulative effects of the wildfires and other danger tree work are considered, but are not the focus of this report. The negative effects that would be worsened by proceeding with the sales as prescribed/sold that conflict with law are discussed. Where direct effects of the harvest would be more than what was analyzed for or consulted on in the EIS and RODs, recommendations were provided to reduce or eliminate those effects. Review of relevant scientific literature, GIS based analysis, limited post-fire field visits in the vicinity, many discussions with other watershed specialists, and best professional judgement in a unique situation led to the findings and recommendations provided here. The processes, pathways, likelihood, and magnitude of effects to aquatic resources were examined, along with the identification of mitigations or other supplemental measures to reduce unacceptable negative effects. For a greater look into this rationale, see the project record. The Supplemental Project Design Features specify the supplemental measures that are needed to keep the project within the scope of hydrological effects considered in the Hwy 46 EIS.

Stream flows and channels

Surface runoff and peak flows have increased post-fire due to the loss of canopy interception, decreased soil infiltration and increased surface runoff in burned areas. The BAER report estimated an increase in peak flows 1-4 times. Observations during fall and early winter storms in late 2020 include several new small stream channels and channel diversions and a moderate increase in peak stream flows. On a catchment to watershed scale, post-fire harvest activity will not increase surface runoff or peak flow response more than what was analyzed in the EIS. The ARP model for analyzing peak flow responses to harvest was not re-run for this review because it is not designed for burned areas and would not be an appropriate use.

Evapotranspiration will be much lower than pre-fire, leading to increased summer (dry/growing season) stream flows. In areas of high tree mortality, streams that were classified as intermittent may flow all through the dry season. In addition, new stream channels are likely to be discovered in sale units during boundary adjustment and harvest. During the time between the RODs and the timber sale contracts, many parts of original units were dropped, including nearly all ground-based stream crossings but new ones are likely to be identified and will be implemented with BMPs identified in the original EIS. Localized changes in surface hydrology could occur with ground disturbance on burned soils and stream crossings. These fire-related hydrologic changes require additional protection needs related to stream crossing designs, monitoring, and buffers (see Supplemental Project Design Features).

Riparian Conditions

Large wood and riparian vegetation complexity have been altered across the burned areas of the watershed. The Hwy 46 EIS proposed treatment in Riparian Reserves, primarily to improve structural species diversity while maintaining and improving ACS objectives of the Northwest Forest Plan. While there may be increased large wood recruitment to streams in the short to intermediate post-fire term, long-term wood recruitment potential is reduced in severely burned drainages. Harvest in fire-affected Riparian Reserves would not meet the ACS objectives originally analyzed for, now would it meet ESA fisheries consultation completed as part of the EIS. With the exception of the Fox Creek and portions of Short Creek drainages, the Riparian Reserves across the rest of the project area are considered fire affected and will be buffered out from harvest to comply with ACSOs and ESA fisheries consultation. Large wood recruitment to streams and riparian vegetation composition would then not be affected by post-fire harvest. In very dense Riparian Reserves that are not fire affected (primarily Fox and Short timber sales), the effects on harvest in will remain the same as analyzed in the EIS.

Water Quality

To protect water quality, the District Interdisciplinary Team considered type of disturbance (logging system), soil burn severity, slope, likely buffer capacity of post-fire ground cover, the distance between harvest and the streams, and stream class for each sale unit. A recent study by Robichaud et al (2021) showed increased potential for sediment delivery to streams in areas of high and moderate soil burn severity. Based on post-fire mapping (Lionshead BAER Report, 2020) and recommendations made by Robichaud et al (2021), streamside buffers were increased to 400 feet above riparian areas and contributing hillslopes with high burn severity and 300 feet above moderate soil burn severity. Additionally, new stream crossings will be limited, heavy equipment will be kept off moderate and high burn severity soils, and operations will not create skid trails with direct connection to streams. Finally, ground-based operations on the upper tier of slope-based thresholds (20-30% slopes, as delineated during the soil analysis). These changes are outlined in the Supplemental Project Design Features (reference) and will minimize sedimentation into streams from operations to the greatest extent possible, in accordance with Clean Water Act and ESA consultation requirements. With these Supplemental Project Design Features, effects to water quality from operations fall within the scope of effects discussed in the original EIS.

Increased surface runoff onto roads in recently burned, unvegetated ditch lines and hillslopes are also a likely source of increased sediment delivery to streams following wildfire. Hauling during wet season conditions increases this risk. On haul roads that have already been designed and reconstructed for wet season haul, this impact would remain within the scope of the effects analyzed by implementing the prescribed Supplemental Project Design Features. This includes adequate road surface drainage, re-seeding the ditch lines, installation of additional erosion control and close monitoring during wet haul conditions.

The Hwy 46 EIS maintained stream temperatures in accordance with the Clean Water Act/TMDL Implementation Strategy (FS/USDI 2012) by buffering primary shade zones and retaining 40% minimum canopy cover in secondary shade zones. The wildfires have since burned through the canopy of many riparian areas, decreasing shade to streams. This loss of primary shade zone is expected to increase stream temperatures throughout the watershed. To avoid further loss of stream shade, the primary and secondary shade zones of streams will be fully protected in all fire affected areas by dropping fire-affected Riparian Reserves from future Hwy 46 harvest.

<u>Fisheries</u>

The Record of Decision (ROD) for the northern Hwy 46 project was **determined to be not likely to adversely affect Upper Willamette River (UWR) spring chinook salmon**; There is no designated Critical Habitat for UWR spring chinook salmon above Detroit dam. The ROD for the southern Hwy 46 project was determined to be a no-effect to UWR spring chinook based on Project Design Features and fish distribution. There was no incidental take issued for UWR spring chinook. The following are the mechanisms for fisheries effects that were of greatest concern:

- Sedimentation:
    - The project element with the highest probability to result in sediment inputs into the stream network was rock and timber haul. Haul routes were carefully considered by the District Fish Biologist in the project design. In particular, haul from the southern ROD area was directed over the neighboring watershed to connect with highway 22 (FS Rte. 2231) rather than crossing the North Fork Breitenbush. The condition of this road is reported as damaged, specifically that the recently installed culverts have melted. If a change of haul route is requested to haul out the FS 4600 road, ESA consultation on the southern ROD would be needed. The timeframe to complete this would be approximately 6-9 months.

However, unit by unit analysis by the interdisciplinary team indicate that there will be no proposed changes to haul routes and all roads will be restored to a condition that meets standards for timber haul.

- Riparian Reserve treatments were also determined to be a potential mechanism for sediment delivery to the stream network, although the original analysis included project design features that would have minimized this potential. Given that a large majority of Riparian Reserves in the entire Hwy 46 project area experienced some level of burning, there is an increased probability of sediment delivery to the stream network from treatment actions as a result of the loss of ground vegetation. This vegetation acts as a filter, reducing the probability of overland water flow, thus keeping the sediment out of the stream. The hydrologist report addresses the probability of increased sediment delivery from Riparian Reserve treatments in burned units and recommends no treatment within Riparian Reserves. With implementation of the Supplemental Project Design Features, no additional sediment effects from harvest operations to fisheries are expected and sediment inputs are expected to be consistent with the ESA consultation.

- Stream Temperature:
  - The main mechanism for effect to stream temperature is removal of overstory canopy in the primary shade zone. Temperature increases as a result of shade loss from the fire are expected although the magnitude of the increases is hard to predict due to other factors affecting stream temperature such as hyporheic flow, cold water inputs, stream orientation, etc. The original project design minimized temperature effects by requiring no-harvest stream buffers in the inner Riparian Reserve and reduction of canopy cover in the outer Riparian Reserve to no less than 40%. In review of the post fire canopy cover estimates for each treatment unit provided by the district silviculturist, many units are well below the 40% canopy cover threshold prior to treatment. In addition, it is likely that the inner Riparian Reserve areas have reduced canopy covers which further increases the probability of temperature increases from treatments of the outer Riparian Reserves. In Riparian Reserve units that experienced fire, removal of additional green trees within 1 site potential tree height will likely result in temperature effects beyond what was originally considered. Therefore, it was recommended that any fire affected Riparian Reserves within units be dropped from further harvest in order to be consistent with ESA consultation.

- In-stream and Riparian Reserve wood recruitment:
  - Wood recruitment to the stream network was considered a primary mechanism to affect the fisheries resource in the original analysis. The pre-fire condition of most Riparian Reserves was a deficit in wood within the streams. Given the magnitude of Riparian Reserve areas impacted by the fire, downed wood is likely to be abundant. However, the trees within the treatment areas were of small diameter and the remaining green trees represent the future large wood sources in the coming centuries. Removal of green trees is not expected to have an effect on short term wood recruitment, however would likely reduce the amount of wood recruitment in the very long term. For these reasons, no additional removal of green trees from burned Riparian Reserves was recommended in order to remain consistent with the ESA consultation.

The post-fire condition of the Riparian Reserves is based on the BAER assessment for the Lionshead Fire including burn severity maps. The effect of the harvest treatments is based on determinations made by the project biologist in the Hwy 46 consultation and effects analysis, assessment of stand-replacement effects from RAVG mapping and some limited field review of burned units by the project silviculturist. Not all units were accessible and remote sensing satellite imagery was utilized and is currently the best available data source.

Soils

Fire effects to soils are complex and wide-ranging; as such, a full analysis of this topic is beyond the scope of this Supplemental Information Report (SIR). It is commonly accepted that the greatest fire-borne impacts to soils and associated watershed resources come from the increased risk of erosion and sedimentation. This is due to the consumption of the top layers of soil organic matter (commonly called the "duff" layer or soil O horizons) and underlying mineral "topsoil". The degree of these losses from wildland fires are quantified using processed satellite imagery to produce a Burn Area Reflectance Classification (BARC) map. BARC maps for the Lionshead Fire show that it produced a mosaic of soil burn effects in the low, moderate and high ranges of this classification system. This imagery, coupled with topographic slope analysis, stream/riparian reserve footprints, logging system information, vegetation burn mortality, and silvicultural prescriptions culminated in a unit-by-unit determination of soil Supplemental Project Design Features to protect soil resources. These enhanced features focusing on erosion and sedimentation control measures, soil organic matter maintenance or improvement, and site-specific best management practices helped lead to a careful determination that no additional environmental analysis vis-à-vis soils is needed to continue the proposed timber sale activities in the fire-affected landscape.

Table 3. Timber Sale Units with Soil Resource Effects Requiring Additional Design Features

Timber Sale Area	# of Units w/ > 20% Mod/High SBS	Project Design Criteria (PDC) to Apply for Addressing Soil Burn Severity (SBS)	# of Units with >20% Mod-High SBS and 20-30% slope ranges	PDC to Apply for Combined SBS and Slope Effects
Cultus	52	Use enhanced soil erosion and sediment (E&S) control techniques/materials in areas where Burn Area Reflectance Classification ("BARC") maps show greater than 20% of the unit in the moderate and high soil burn severity classes, combined. These may include but are not limited to slash mats for ground-based operations, lopped and scattered slash for nutrient and organic matter supplementation, E&S materials such as straw wattles, erosion control blankets, silt fencing, and log erosion barriers, seeding, and other techniques and materials deemed site/condition appropriate by USFS resource specialists.	45	In areas where ground-based logging operation occur on slopes from 20-30% in areas with moderate to high soil burn severity, slash mats at least 8" thick shall be used to prevent further soil resource degradation. Avoid ground-based operations on these slopes to the greatest extent practicable.
Collawash	7		6	
Roaring	8		5	
Mansfield	1		1	

Heritage

Per the National Historic Preservation Act (NHPA) of 1966, as amended; the 2004 Programmatic Agreement (PA) Among the United States Department of Agriculture Forest Service Pacific Northwest Region (Region 6), and the Oregon State Historical Preservation Officer Regarding Cultural Resources Management In the State of Oregon by the USDA Forest Service; and the Willamette Forest Plan standards and guidelines, the Forest Service must consider the effects of its actions on historic properties. Due to the changed condition created by the catastrophic 2020 fires, the environment has been degraded from the time of initial analysis, and the effect analysis for cultural resources needs to be revisited.

The Willamette National Forest Heritage Program has developed a Cultural Resource Protection Plan for Fire Recovery Actions. Action items for sold and awarded timber sales include:

- Conduct cultural inventory of high probability areas in moderate to high burn severity.
- Flag and avoid all cultural resources. Provide ample buffer (Minimum 30 meters) as resource dictates.
- Hand thin within site boundaries, when necessary and possible with current capacity and funding. A professional/qualified archaeologist will monitor hand thinning activities.
- No dragging of felled trees within site boundary.

High probability areas for cultural resources are defined as slopes 0-25%, areas that exhibit certain topographic characteristics, such as ridge tops, the edges of meadows/marshes, seasonal ponds and lakes, rocky outcrops, the valley floor adjacent to springs and level streamside areas, areas of ethnographic or historic use, or proximity to known heritage resources. For the purposes of this project, slope and proximity to known cultural resources was considered when calculating the acres to be resurveyed.

Within the five timber sales designed from the Hwy 46 Project EIS (R2014061804010) units, roughly 220 acres are high probability slopes that burned at high or moderate soil burn severity. In addition, there are a total of 10 known cultural resources that need to be monitored. It is also recommended that high probability units that burned at low soil burn severity near the Breitenbush community be re-surveyed. Burn severity on high probability areas are detailed in Table 4.

Table 4. Burn severity on high probability acres in the Hwy 46 timber sale units

	High Probability Slope Acres				
Timber Sale	High Burn Severity	Moderate Burn Severity	Low Burn Severity	No Burn	#Sites to Monitor
Short	**0**	**0.94**	20.38	136.86	0
Cultus	**29.79**	**155.99**	164.32	14.4	3
Collawash	**0.1**	**7.977**	58.36	12.45	2
Roaring	**10.08**	**10.62**	34.81	8.07	2
Mansfield	**0**	**6.16**	75.26	22.26	3
Fox	**0**	**0**	0	All	0
TOTAL	39.97	181.687	353.13	194.04	10

Botany

Timber sale units and soil burn severity were overlaid with NRIS TESP/IS element occurrence (rare and survey and manage) points and polygons and invasive plant polygons to see where they intersected.

Most of the rare botanical species and wet special habitats were buffered from management in the Hwy 46 EIS. Therefore, changes in prescriptions for most units would have no effect on botanical resources, maintaining the effects considered in the Hwy 46 EIS.

Rare Botanical Species

Table 5. Populations of rare species requiring buffers

Project	Unit	Species	Stand Burn Severity	Analysis
Short	24a	*Chalciporus piperatus*, S&M Category D; 100 ft buffer; *Pseudocyphellaria rainierensis*, S&M Category A, 100 ft buffer	Unburned	No change
Short	27	*Sparassis crispus*- Survey and Manage Fungus Cat D; were going to avoid if possible, botanist help mark	Low severity burn	No change
Short	28	*Nephroma occultum*- Survey and Manage Cat A lichen- buffer 100 ft	Low severity burn	No change
Short	30	*Sparassis crispus*- Survey and Manage Fungus Cat D; were going to avoid if possible, botanist help mark	Low/Moderate severity	Unknown effect on population, unknown if population still there; pre-harvest survey will be completed
Collawash	53	Buffer *Chaenotheca chrysophylla*- Survey and Manage lichen 100 ft	No/Low severity burn	No change
Short	83E, C	*Rhizopogon truncatus*- Survey and Manage category D- 50 ft buffer *Pseudocyphellaria rainierensis*- Survey and Manage category A- 100 ft. buffer	Unburned	No change
Fox	95	*Nephroma occultum*- Survey and Manage Cat A lichen- buffer 100 ft	Unburned	No change

Only one unit has the potential for the species to be impacted by the fire. The population of *Sparassis crispa*, the cauliflour mushroom, is located in a moderately intense fire frequency. If the host tree on which this fungus lives is dead, this population will also be gone. Loss of this population of fungi should not affect harvest of the unit. A site visit to the location this population will be performed prior to the start of harvest to determine whether this site still needs to be buffered.

Invasive Plants

A similar analysis was conducted with noxious weeds- soil severity underlaid weed populations and unit boundaries to determine whether weed populations could have been affected by fire.

Table 6. Noxious weeds in the treatment units

Project	Unit	Species	Stand Burn Severity	Analysis
Collawash	44, 62, 64	Knapweed, along 46 and powerline corridor; Scotch broom	Moderate severity	Unknown effect, could greatly increase population, needs post-fire survey
Cultus	260, 280	Thistle on 2231/870 may increase from fire	Moderate severity	Unknown effect, could greatly increase population, needs post-fire survey

Weed populations that overlapped with units included several along FS 4600 road/BPA powerline that have spotted knapweed in them. These weed populations could have increased significantly given the fire treatments and heavy road traffic. One other spot where weed populations could have increased post-fire would be the thistle population along FS 2231/870 road. Surveying and remapping these populations will be completed along with the BAER weed surveys and control project. Additional weed populations will not hinder timber harvest in these areas; however, the district may need to monitor and treat larger areas of weeds than originally anticipated.

Conclusion

As required by the CEQ NEPA regulations and Forest Service direction, I reviewed the IDT's analysis and recommendations regarding the new information or change circumstances related to the Hwy 46 EIS as described above. Based on the analysis contained in the Hwy 46 EIS and all other information described above, I determined that the new information or changed circumstances do not result in significant impacts from operations beyond the scope and range of effects considered in the original analysis if IDT recommendations, additional design features, and the updated prescription are adhered to. As such, the Hwy 46 EIS does not need supplementation, the decisions are still appropriate, and implementation will proceed with the incorporation of the Supplemental Project Design Features.

SHAWN RIVERA Digitally signed by SHAWN RIVERA
Date: 2021.04.26 13:30:54 -07'00'

Shawn Rivera
District Ranger
Detroit Ranger District

Enclosures:
Supplemental Project Design Features
Supplemental Information Review of Salvage in LSR Relative to the Hwy 46 EIS update
Hwy 46 Post-Fire Rx
Rx Criteria